

## Diabetes in Canada

### Estimated prevalence and cost<sup>1</sup>

Prevalence	2019	2029
Diabetes (type 1 and type 2 diagnosed)	3,655,000 / 9%	4,785,000 / 11%
Diabetes (type 1)	5-10% of diabetes prevalence	
Diabetes (type 1 + type 2 diagnosed + type 2 undiagnosed) and prediabetes combined	10,991,000 / 29%	13,340,000 / 32%
Increase in diabetes (type 1 and type 2 diagnosed), 2019-2029		31%
Out-of-pocket cost per year <sup>2</sup>		
Type 1 diabetes on multiple daily insulin injections	\$1,100-\$2,600	
Type 1 diabetes on insulin pump therapy	\$1,400-\$4,900	
Type 2 diabetes on oral medication	\$1,200-\$1,900	

### Impact of diabetes

- Diabetes complications are associated with premature death. Diabetes can reduce lifespan by five to 15 years. It is estimated that at least one in every ten deaths in Canadian adults was attributable to diabetes in 2008–2009.<sup>3</sup>
- People with diabetes are over three times more likely to be hospitalized with cardiovascular disease, 12 times more likely to be hospitalized with end-stage renal disease and almost 20 times more likely to be hospitalized for a non-traumatic lower limb amputation compared to the general population.<sup>3</sup>
- Diabetes contributes to 30% of strokes, 40% of heart attacks, 50% of kidney failure requiring dialysis, and 70% of non-traumatic lower limb amputations every year.<sup>4</sup>
- The prevalence of clinically relevant depressive symptoms among people with diabetes is about 30%; individuals with depression have an approximately 60% increased risk of developing type 2 diabetes.<sup>5</sup>
- The risk of blindness in people with diabetes is up to 25 times higher than those without diabetes.<sup>6</sup> Diabetes is the leading cause of acquired blindness in Canadians under the age of 50.<sup>7</sup> Diabetic retinopathy affects 500,000 Canadians.<sup>8</sup>
- Foot ulceration affects an estimated 15%–25% of people with diabetes in their lifetime.<sup>9</sup> One-third of amputations in 2011–2012 were performed on people reporting a diabetic foot wound.<sup>10</sup>

- Some populations are at higher risk of type 2 diabetes, such as those of African, Arab, Asian, Hispanic, Indigenous or South Asian descent, those who are older, have a low income or are living with overweight. Diabetes rates are three to five times higher in First Nations populations than in the general population, a situation compounded by barriers to care for Indigenous peoples.<sup>5</sup>
- For many Canadians with diabetes, adherence to treatment is affected by cost. The majority of Canadians with diabetes pay more than 3% of their income or over \$1,500 per year for prescribed medications, devices and supplies out-of-pocket.<sup>11,12</sup>
- Among Canadians with type 2 diabetes, 33% do not feel comfortable disclosing their disease to others.<sup>12</sup>
- Hypoglycemia (low blood sugar) and hyperglycemia (high blood sugar) may affect mood and behaviour, and can lead to emergency situations if left untreated.

## **Policy, programs and services related to diabetes**

- In 2016, Health Canada announced its Healthy Eating Strategy, which aims to improve the food environment and decrease chronic disease risk, including type 2 diabetes, by:
  - supporting healthy eating through the revision of Canada's Food Guide
  - restricting the marketing of unhealthy foods and beverages to children
  - strengthening labelling and claims to make it easier for Canadians to identify foods high in sugar, saturated fat and salt
  - working with manufacturers and restaurants to reduce sodium and trans fats in food
  - increasing access to, and availability of, nutritious foods through its Nutrition North program
- A Parliamentary All-Party Diabetes Caucus was convened in 2016 and meets at least twice a year to advocate for diabetes issues within Parliament in partnership with Diabetes Canada.
- Diabetes Day on the Hill is a federal advocacy event held each fall to connect MPs with those living with, and volunteering to support, diabetes. In 2018, advocates met with 30 MPs and Senators as part of this event to discuss Diabetes Canada's 2019 pre-budget submission.

## **Challenges**

Canada faces unique challenges in preventing type 2 diabetes and meeting the needs of those living with diabetes:

- One in seven Canadians self-identifies as Black, Chinese, Latin American, South Asian or Southeast Asian.<sup>13</sup> These groups are at greater risk of developing type 2 diabetes than the general population. Canada is also home to over 1.4 million Indigenous people, who face significantly higher rates of diabetes and suffer more health consequences than the overall population.<sup>14</sup>
- For the first time in history, the number of adults aged 65 years and older in Canada exceeds the number of children.<sup>15</sup> Risk of developing type 2 diabetes increases with age. Older patients

with diabetes are more likely to be frail and progressive frailty has been associated with reduced function and increased mortality.<sup>16</sup>

- Canada has high rates of many risk factors that contribute to the growing prevalence of type 2 diabetes: 46% of Canadian adults are physically inactive, 60% are not eating enough fruits and vegetables, 35% of adults and 19% of youth are living with overweight, and 18% of the population smokes tobacco.<sup>17,18,19</sup>

## Diabetes Canada recommendations to the Government of Canada

1. Adopt a nation-wide strategy, like [Diabetes 360°](#), aimed at achieving measurable improvements in the prevention and treatment of diabetes and reducing its burden on Canadians and the health-care system.
2. Ensure fairness in access to the Disability Tax Credit and Registered Disability Savings Plan for Canadians living with type 1 diabetes.
3. Adopt a national pharmacare approach with a goal to reduce out-of-pocket costs for people with diabetes and facilitate their achievement of better health outcomes.
4. Take a leadership role in implementing decision support tools for diabetes management by incorporating electronic medical records into health systems within federal jurisdiction and support provinces to do the same.

## References

<sup>1</sup> Diabetes statistics in Canada are estimates generated by the Canadian Diabetes Cost Model, a forecasting model that provides projections on prevalence, incidence and economic burden of diabetes in Canada based on national data from government sources.

<sup>2</sup> Estimated out-of-pocket costs for type 1 and type 2 diabetes were calculated based on composite case studies. As such, the estimates may reflect the out-of-pocket costs for many people with diabetes in Canada, but not all. The costs are 2015 estimates and may vary depending on income and age. For details on the methodology and estimates, please see the appendix in the Diabetes Canada's 2015 *Report on Diabetes: Driving Change*, retrieved from <https://www.diabetes.ca/getmedia/5a7070f0-77ad-41ad-9e95-ec1bc56ebf85/2015-report-on-diabetes-driving-change-english.pdf.aspx>.

<sup>3</sup> Public Health Agency of Canada. (2011). Diabetes in Canada: Facts and figures from a public health perspective. Ottawa, Ont.: Public Health Agency of Canada. Retrieved from <https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/cd-mc/publications/diabetes-diabète/facts-figures-faits-chiffres-2011/pdf/facts-figures-faits-chiffres-eng.pdf>.

<sup>4</sup> Institute for Clinical Evaluative Sciences. (2003). Diabetes in Ontario: An ICES Practice Atlas. Retrieved from <http://www.ices.on.ca/Publications/Atlases-and-Reports/2003/Diabetes-in-Ontario.aspx>.

<sup>5</sup> Diabetes Canada Clinical Practice Guidelines Expert Committee. (2013). Diabetes Canada 2013 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada. *Can J Diabetes*, 37 (suppl 1).

<sup>6</sup> Thomann KH, Marks ES, Adamczyk DT. (2001). Primary Eye care in Systemic Disease; New York: McGraw-Hill. (Cited in <http://www.cdc.gov/diabetes/ndep/pdfs/ppod-guide-eye-care-professionals.pdf>; also by Ovenseri-Ogbomo, et al. 2013).

<sup>7</sup> CNIB. (2015). About diabetic retinopathy. Retrieved from <http://www.cnib.ca/en/your-eyes/eye-conditions/eye-connect/DR/About/Pages/default.aspx>.

<sup>8</sup> CNIB. (2015). Eye connect: diabetic retinopathy. Retrieved from <http://www.cnib.ca/en/your-eyes/eye-conditions/eye-connect/DR/Pages/default.aspx>.

<sup>9</sup> Singh, N, Armstrong, DG, Lipsky, BA. (2005) Preventing Foot Ulcers in Patients with Diabetes. *JAMA*. 2005;293(2):217-228. Retrieved from <http://jama.jamanetwork.com/article.aspx?articleid=200119#REF-JCR40054-1>.

<sup>10</sup> Canadian Institute for Health Information. (2013). Compromised wounds in Canada. Ottawa, Ont.: Canadian Institute for Health Information. Retrieved from [https://secure.cihi.ca/free\\_products/AiB\\_Compromised\\_Wounds\\_EN.pdf](https://secure.cihi.ca/free_products/AiB_Compromised_Wounds_EN.pdf).

<sup>11</sup> Out-of-pocket costs that exceed 3% or \$1,500 of a person's annual income are defined as catastrophic drug costs by the Kirby and Romanow Commissions on healthcare. Please see Diabetes Canada. (2011). The burden of out-of-pocket costs for Canadians with diabetes. Retrieved from <http://www.diabetes.ca/CDA/media/documents/publications-and-newsletters/advocacy-reports/burden-of-out-of-pocket-costs-for-canadians-with-diabetes.pdf>.

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<sup>12</sup> Diabetes Canada (2015). 2015 Report on Diabetes: Driving Change. Toronto, Ont.: Diabetes Canada. Retrieved from <https://www.diabetes.ca/getmedia/5a7070f0-77ad-41ad-9e95-ec1bc56ebf85/2015-report-on-diabetes-driving-change-english.pdf.aspx>.

<sup>13</sup> Statistics Canada. 2011 National Household Survey, data tables. Retrieved from [http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/dt-td/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=0&PID=105395&PRID=0&PTYPE=105277&S=0&SHOWALL=0&SUB=0&Temporal=2013&THEME=95&VID=0&VNAMEE=&VNAMEF="](http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/dt-td/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=0&PID=105395&PRID=0&PTYPE=105277&S=0&SHOWALL=0&SUB=0&Temporal=2013&THEME=95&VID=0&VNAMEE=&VNAMEF=).

<sup>14</sup> Statistics Canada. Number and distribution of the population reporting an Aboriginal identity and percentage of Aboriginal people in the population, Canada, provinces and territories, 2011. Retrieved from <http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-011-x/2011001/tbl/tbl02-eng.cfm>.

<sup>15</sup> Statistics Canada. The Daily – Canada's population estimates: Age and sex, July 1, 2015. Retrieved from <http://www.statcan.gc.ca/daily-quotidien/150929/dq150929b-eng.htm>.

<sup>16</sup> Meneilly GS, Knip A, Tessier D. Diabetes in the Elderly. *Can J Diabetes* 2013; 37 (1): S184-S190. Retrieved from <http://guidelines.diabetes.ca/browse/chapter37>.

<sup>17</sup> Statistics Canada. Table 105-0501 - Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2013 boundaries) and peer groups, occasional, CANSIM (database). Retrieved from <http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=1050501&&pattern=&stByVal=1&p1=1&p2=31&tabMode=dataTable&csid=#archived>.

<sup>17</sup> Statistics Canada. (2017). Table 105-2023 – Measured adult body mass index (BMI) (World Health Organization classification), by age group and sex, Canada and provinces, Canadian Community Health Survey – Nutrition, occasional. Retrieved from [http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=1052023&&pattern=&stByVal=1&p1=1&p2=31&tabMode=dataTable&csid="](http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=1052023&&pattern=&stByVal=1&p1=1&p2=31&tabMode=dataTable&csid=).

<sup>18</sup> Statistics Canada. (2017). Table 105-2023 – Measured adult body mass index (BMI) (World Health Organization classification), by age group and sex, Canada and provinces, Canadian Community Health Survey – Nutrition, occasional. Retrieved from [http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=1052023&&pattern=&stByVal=1&p1=1&p2=31&tabMode=dataTable&csid="](http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=1052023&&pattern=&stByVal=1&p1=1&p2=31&tabMode=dataTable&csid=).

<sup>19</sup> Statistics Canada. (2017). Table 105-2024 - Measured children and youth body mass index (BMI) (World Health Organization classification), by age group and sex, Canada and provinces, Canadian Community Health Survey – Nutrition, occasional. Retrieved from [http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=1052024&&pattern=&stByVal=1&p1=1&p2=31&tabMode=dataTable&csid="](http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=1052024&&pattern=&stByVal=1&p1=1&p2=31&tabMode=dataTable&csid=).

Last updated: January 2019